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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/582,456

Applicant(s)

WIPPRECHT ET AL.

Examiner

JACOB CIGNA

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1,3-22,24 and 25 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1,3-22,24 and 25 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 June 2011 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 5-11, 13-15, 17, 19-21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al. (US Patent 3,699,621 hereinafter referred to as CLARKE) in view of Kusters et al (US Patent 3,046,637 hereinafter referred to as KUSTERS).

4. As to claim 1, CLARKE discloses **a web-processing roller** (CLARKE discloses a resilient roller capable of processing webs), **comprising a roller body having at least one hollow space defined therein** (roller 29 has space 9 between the sleeve 2 and the core member 1 (Figure 1)), **wherein the hollow space is at least partially filled with a mixture consisting of a liquid** ("The space 9 between the sleeve 2 and

core member 1 is filled with a material that is liquid under the intended conditions of use of the roller" (Column 3 lines 1-3).) **and at least one insoluble co-ingredient in the liquid formed by solid particles or by another liquid** ("If desired, solid materials or other liquids may be mixed with the filled material provided they remain uniformly dispersed in the filling material in order to improve its thermal conductivity properties" (Column 6 lines 43-47). The teaching to "uniformly dispersed" inherently requires a solution of filler liquid having particulate matter in uniform suspension.). CLARKE does not teach **the mixture is accommodated in separate containers which are arranged adjacently and spaced from each other along the rotational axis of the roller in the interior of the roller**. However, KUSTERS teaches a roller for pressure treatment of webs such that a fluid (liquid or gas) is put inside of tubes 5 between the outer edge of a core 2 and the inner surface of a cylinder 1. The tube are taught to be separate containers and are adjacently spaced from each other along the rotational axis of the roller in the interior of the roller as shown in at least Figure 2. Both CLARKE and KUSTERS teach pressurizing the interior of a cylinder roller for use in web making. Thus, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have included the tubes of KUSTERS in the roller of CLARKE because one would have recognized that one would have been able to more greatly control the pressures within CLARKE by separating the pressure chambers into the tube segments.

5. As to claim 3, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, wherein **the mixture is under a pressure burden** (CLARKE

teaches "It is also preferable that the roller be pre-pressurized, i.e. filled with a filling material under pressure" (Column 5 lines 40-42). KUSTERS teaches that the fluid should be about 1 atm (Column 2 lines 55+)).

6. As to claim 5, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 3, wherein **a fluid conduit leads into the hollow space and the mixture can be charged with the pressure burden via the fluid conduit** (KUSTERS teaches a fluid conduit for the purpose of pressurizing the tubes 5 in Column 1 lines 55+: "the tubes are... adapted to be connected to a source of pressure through pressure distributing means...").

7. As to claim 6, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, wherein **at least one chamber which is variable in its volume is arranged in the hollow space** (the space 9 of CLARKE comprises a chamber which has a variable volume, as evidenced by the o-ring 4 and sleeve 7 shown in Figure 1. As the sleeve 7 and o-ring 4 combination is threaded further or closer to the o-ring 3, the volume of the chamber changes.).

8. As to claim 7, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 6, wherein **the chamber comprises a flexible chamber wall** (a chamber wall is the o-ring 3,4 which are taught to be flexible.).

9. As to claim 8, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 6, wherein **the chamber is a bubble**. An inspection of Applicant's specification does not give any definition of the term "bubble" beyond the general terms "elastic" and "not rigid" in reference to the chamber walls, as well as having a pressure

differential between the inside and the outside of the chamber. Examiner acknowledges that the walls of CLARKE are on the whole rigid, but are elastic at the o-rings, and have a pressure differential between the inside and outside. Further, KUSTERS teaches fluid-filled elastomeric tubes entirely surrounded by the shell of the roller. The tubes are filled with hydraulic fluid and can be considered to be bubbles.

10. As to claim 9, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 6, wherein **the chamber comprises a moving chamber wall** (as discussed in the rejection of claim 6, the o-ring 4 moves, which changes the volume of the chamber.).

11. As to claim 10, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 9, wherein **the chamber wall is mounted, such that it can move, by another chamber wall** (Examiner interprets the term, "by" to mean that the chamber wall is mounted such that it can move *past* another chamber wall. Examiner recognizes that it would also be reasonable for a person having ordinary skill in the art to read the claim limitation to mean that the another chamber wall causes the chamber wall to move. Under Examiner's interpretation, the o-ring 4 (the chamber wall) moves past metal sleeve 2 (another chamber wall)).

12. As to claim 11, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 6, wherein **the chamber is formed by elastic bellows**. This is a product by process claim. The roller disclosed by CLARKE overcomes this limitation because the roller 29 is capable of having a chamber formed by elastic bellows. For more information about Product by Process claims, please refer to MPEP §2113. Under

a different interpretation of claim Examiner recognizes that the word, "formed," maybe used as an adjective instead of the verb. Under this interpretation, CLARKE teaches o-rings 3 and 4 which comprise the chamber. O-rings 3 and 4 are elastic bellows.

13. As to claim 13, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, wherein **the hollow space is rotationally symmetrical with respect to a rotational axis of the roller** (as taught by CLARKE and KUSTERS Figures 1, the hollow space is arranged circumferentially of the core member 1 (2) and is thus rotationally symmetrical with the rotational axis of the roller) **or is one hollow space of a number of hollow spaces which together form a rotationally symmetrical arrangement of hollow spaces with respect to the rotational axis** (as taught by KUSTERS, the tubes are rotationally symmetrical about the rotational axis).

14. As to claim 14, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, wherein **the roller** (roller 29) **comprises a roller shell** (thin metal sleeve 2) **which forms a container wall for the mixture** (as shown in Figure 1, the sleeve 2 forms a wall for the hollow space 9 and the chamber.).

15. As to claim 15, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, wherein **the roller** (roller 29) **includes a roller shell** (metal sleeve 2) **and a cylindrical body surrounded by the roller shell** (core member 1 is surrounded by the roller shell), **and wherein the mixture is arranged between the roller shell and the cylindrical body** (between the shell 2 and the core 1 is the hollow space 9 and the chamber, where the mixture is (Column 3 lines 1-3). The combination

of KUSTERS into CLARKE puts the mixture in tubes 5 between the core 2 and the shell 1, thus the mixture is still arranged between the shell and the body.).

16. As to claim 17, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 15, wherein **the cylindrical body forms a container wall for the mixture** (the core 1 is shown in Figure 1 to provide a wall for the mixture. The tubes 5 of KUSTERS are held in place partially by the core 2).

17. As to claim 19, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 15, wherein **the roller is a displacement-type roller and a displacement body forms the cylindrical body** (as shown in CLARKE Figures 1 and 5).

18. As to claim 20, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, wherein **at least one container forming the hollow space is arranged in the roller** (there are tubes 5 which are containers forming the hollow space which are arranged in the roller, as taught by KUSTERS.).

19. As to claim 21, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, wherein **at least one thermal treatment channel for conducting a heating or cooling fluid extends through the roller body of the roller** (the channel of CLARKE in the hollow space 9 is capable of conducting heating or cooling fluid, and extends through the roller body.) **and ports at at least one axial end of the roller body** (KUSTERS teaches that the pressure is applied to an effective side or line of the roller (Column 1 lines 57+)).

20. As to claim 25, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 9, wherein **the chamber wall is guided, such that it can move, by another chamber wall** (Examiner interprets the term, "by" to mean that the chamber wall is mounted such that it can move *past* another chamber wall. Examiner recognizes that it would also be reasonable for a person having ordinary skill in the art to read the claim limitation to mean that the another chamber wall *causes* the chamber wall to move. Under Examiner's interpretation, the o-ring 4 (the chamber wall) moves past metal sleeve 2 (another chamber wall)).

21. Claims 12, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al. (US Patent 3,699,621 hereinafter referred to as CLARKE) in view of Kusters et al (US Patent 3,046,637 hereinafter referred to as KUSTERS) as applied to claim 1 above, and further in view of Panossian (US Patent 5,365,842 hereinafter referred to as PANOSSIAN).

22. As to claim 12, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, but does not teach **a rotational axis of the roller extends through the mixture in the hollow space**. CLARKE in view of KUSTERS teaches instead that the axis of the roller extends through the core member 1, which is not taught to have a hollow space. PANOSSIAN teaches a roller with non-obstructive particle damping having damping material 12 in cavities 26 arranged around the circumference of the roller as well as a cavity 26 arranged through the center axis of the roller. Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the rotational axis of the roller of

CLARKE in view of KUSTERS extending through the mixture in the hollow space as taught by PANOSSIAN because one would have recognized that having a cavity through the center of the core member would have increased the amount of mixture available to perform damping, and would have therefore have improved the damping of the roller.

23. As to claim 16, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, wherein **the roller includes a roller shell** (sleeve 2) **and a cylindrical body surrounded by the roller shell** (core member 1 is surrounded by sleeve 2 as shown in Figure 1), but does not teach **the mixture is arranged within the cylindrical body**. With reference to the rejection of claim 12, PANOSSIAN teaches a cavity for holding the damping mixture through the rotational axis of the roller. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the mixture arranged within the core member 1 of CLARKE in view of KUSTERS by being at the center of the roller as taught by PANOSSIAN because one would have recognized that having a cavity through the center of the core member would have increased the amount of mixture available to perform damping, and would have therefore have improved the damping of the roller.
24. As to claim 18, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, wherein **the roller comprises a roller shell** (sleeve 2) **and a cylindrical body surrounded by the roller shell** (core member 1 is surrounded by sleeve 2 as shown in Figure 1), **the mixture is arranged between the roller shell and the cylindrical body** (as shown in CLARKE Figure 1 and KUSTERS Figure 3. CLARKE

in view of KUSTERS does not teach **another mixture consisting of a liquid and at least one insoluble co-ingredient in the liquid is arranged within the cylindrical body**. With reference to the rejection of claims 12 and 16, PANOSSIAN teaches a cavity for holding the damping mixture through the rotational axis of the roller.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the mixture arranged within the core member 1 of CLARKE by being at the center of the roller as taught by PANOSSIAN because one would have recognized that having a cavity through the center of the core member would have increased the amount of mixture available to perform damping, and would have therefore have improved the damping of the roller. CLARKE teaches the mixture is comprised of "solid materials or other liquids" (Column 6 line 43). CLARKE teaches that this mixture is arranged in the hollow space in the roller to perform damping. As taught by CLARKE in view of PANOSSIAN, a hollow space is found within the cylindrical body, thus the mixture would also have been arranged within the hollow space in the core member 1).

25. Claims 4, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al. (US Patent 3,699,621 hereinafter referred to as CLARKE) in view of Kusters et al (US Patent 3,046,637 hereinafter referred to as KUSTERS) as applied to claim 1 and further in view of Sulzer-Escher Wyss (German Patent Publication DE-9301059-U hereinafter referred to as SULZER).

26. As to claim 4, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, but does not teach **the mixture is under a partial vacuum**.

SULZER teaches that to prevent steam bubbling in the liquid, the pressure in the annular space can be from 1-3 bar. Atmospheric pressure is generally agreed to be equal to 1 atmosphere (atm). The conversion from bar to atm is $1 \text{ bar} = 0.9869 \text{ atm}$. Thus, at 1 bar as taught by SULZER, the pressure inside the annular space is under a partial vacuum as compared to the atmospheric pressure, since the pressure is less than 1 atm. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the mixture under a partial vacuum as taught by SULZER in the roller as taught by CLARKE in view of KUSTERS because one would have recognized that the pressures of the annular space would have provided excellent damping as well as web-pressing properties.

27. As to claims 26 and 27, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, but does not teach **the mixture exhibits a pulpy consistency, or the solid particles are a granular solid**. However, SULZER teaches a similar roller which has an outer sleeve and an inner core, the space between the outer sleeve and inner core is filled with at least dampening liquid. SULZER teaches that the degree of the attenuation depends in particular on the quantity of the moved liquid, the viscosity of the liquid as well as the flow resistance. Thus, SULZER teaches that it would have been a matter of routine experimentation with a known variable (viscosity) in order to produce a desirable outcome (appropriate damping). As CLARKE teaches the mixture of solids with liquids, it is further well known in the art that a mixture of solids and liquids in the correct ratio becomes pulpy. Applicant's definition as used throughout the disclosure is merely that the pulpy consistency arises from the mixture of

a liquid and a granular solid. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the mixture such that it exhibited a pulpy consistency because one would have recognized that the consistency of the mixture of liquid and particles as taught by CLARKE would have been directly related to the viscosity of the liquid, the more advantageous viscosity being a matter of routine experimentation.

28. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al. (US Patent 3,699,621 hereinafter referred to as CLARKE) in view of Kusters et al (US Patent 3,046,637 hereinafter referred to as KUSTERS) as applied to claim 1 above respectively, and further in view of Lehtovirta et al (US Patent 5,919,297 hereinafter referred to as LEHTOVIRTA).

29. As to claim 22, CLARKE in view of KUSTERS teaches the web-processing roller according to claim 1, but does not teach **at least one thermal treatment channel for conducting a heating or cooling fluid extends through the roller body of the roller and ports at both axial ends of the roller body**. However, LEHTOVIRTA teaches a roll having an annular chamber defined between an outer sleeve and an inner core (See Figure 1). The roll is used for paper making and in use is damped. Further, LEHTOVIRTA teaches that the chamber contains heating or cooling liquid such that the temperature of the liquid is used to incur the damping. The axial channel is connected to a pipe 6 which is ported at one axial end of the roller body as shown in Figure 1, and passages 8 which are at the other axial end of the roller. Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to

have provided at least one thermal treatment channel for conducting a heating or cooling fluid extends through the roller body of the roller and ports at both axial ends of the roller body as taught by LEHTOVIRTA because one would have recognized that the thermally treating the mixture as taught by LEHTOVIRTA would have provided increased damping.

30. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al. (US Patent 3,699,621 hereinafter referred to as CLARKE) in view of Kusters et al (US Patent 3,046,637 hereinafter referred to as KUSTERS) and Sulzer-Escher Wyss (German Patent Publication DE-9301059-U hereinafter referred to as SULZER) as applied to claim 4 and further in view of Lehtovirta et al (US Patent 5,919,297 hereinafter referred to as LEHTOVIRTA).

31. As to claim 24, CLARKE in view of KUSTERS and SULZER teaches the web-processing roller according to claim 4, but does not teach **a fluid conduit leads into the hollow space and the mixture can be charged with the partial vacuum via the fluid conduit**. LEHTOVIRTA teaches a roll having an annular chamber defined between an outer sleeve and an inner core (See Figure 1). The roll is used for paper making, and in use, is damped. LEHTOVIRTA further teaches a fluid conduit 6 leads into the hollow space. There is no teaching in SULZER as to how to achieve the partial vacuum of 1bar. However, LEHTOVIRTA teaches a fluid pump system in Figure 3 capable of producing a partial vacuum within the roller due to the arrangement of the pump 13 and resistance element 14. As the pump draws the mixture out of the roller, the mixture is stopped at the resistance element 14 creating higher pressure between

the pump 13 and the resistance element 14 and lower pressures within the roller.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided a partial vacuum within the hollow space via the fluid conduit because one would have recognized that fluid conduits are well known system elements with which to provide vacuums in rollers.

Response to Arguments

32. Applicant's arguments, see pages 5-6, filed 14 June 2011, with respect to the rejection(s) of claim(s) 1, 3-22, 24-25 under combinations of CLARKE, SULZER, IDE, LEHTOVIRTA and PANOSSIAN have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of CLARKE, KUSTERS, SULZER, and LEHTOVIRTA. Specifically, the combination of CLARKE in view of SULZER does not teach the new claim limitations of claim 1 to "separate containers which are arranged adjacently and spaced from each other along the rotational axis of the roller in the interior of the roller."

33. Examiner has provided KUSTERS, which teaches tubes 5 which hold fluid in a roller for processing webs. The tubes are shown in Figure 2 to be separate containers which are arranged adjacently and spaced from each other along the rotational axis of the roller in the interior of the roller.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACOB CIGNA whose telephone number is (571)270-5262. The examiner can normally be reached on Monday - Friday 9:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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September 29, 2011